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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,090	03/23/2004	Bernard H. Kear	879.1.008	2534

7590 12/15/2006

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EXAMINER

MILLER, DANIEL H

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/807,090	Applicant(s) KEAR ET AL.	
	Examiner Daniel Miller	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/24/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 9-12,29,32,33 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,13-28,30,31,34-36 and 38-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 13-21, 30-31, 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Withers (U.S. 6,723,279).
3. Withers teaches a composite containing mixed fullerenes that contain soot (column 4 line 7-20; column 25 line 30-45). Regarding claim 2, the method of production is not indicative of the patentability of the product. Regarding claims 4-6, the composite being substantially similar to applicants would have similar physical characteristics as claimed by applicant. Regarding claim 9 and 11, the matrix phase can be metal or ceramic (column 4 line 15-23). Regarding claims 10, 12, 13, 14, the matrix phase can be aluminum copper or titanium and comprise graphite (column 5 line 40-65).
4. Regarding claims 15-21, the composite can be particle or fiber strengthened forms (see ceramic particles and whiskerdized fiber reinforced sections); the reinforcement can be a large variety of material including those claimed by applicant within the weight range of 1-99%. Since the form strengthening material is present

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within a matrix material and functioning as such it would necessarily fall within the range claimed of 1-99%.

5. Regarding claim 30, the composite if constructed with a carbon matrix is porous until infiltrated several times (column 10).

6. Regarding claims 31-37, the matrix phase can be a metal or ceramic, specifically it can be aluminum or copper (column 5 line 40-65). The matrix phase may be ceramic where in the material forms carbides with titanium and rare earth metal (Column 11 and 12).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1--8, 13-19 and 38-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Withers in view of WO 00/15548.

9. Withers, discussed above is silent as to the method of production used by applicant.

1. Regarding claim 1, the reference teaches a composite material comprising carbon fullerenes particles (used as a binder) sintered and combined in a matrix of Graphite diamond, B, C, TiC, SiC or other ceramic composites (page 13 spec).

Regarding claim 2, The fullerenes the can be a mixture of SWNT's and C60 buckyballs

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(page 3 spec). The fullerenes are extracted from soot (page 13 of spec). Regarding claims 4-5, given that the compositions are substantially similar the material taught by the reference should inherently have the same properties as the claimed invention. Regarding claims 6-8, the fullerenes are extracted from and still contain some impurities of hydrocarbons and coal, which are inherently aromatic like fullerenes (background). Regarding claim 13-14, the matrix phase can be Graphite or Diamond (see above). Regarding claim 14-19, the composite can comprise reinforcing particles (spec page 14) such as Boron which would inherently be varied in size and exist within the milli- to nano- meter range. Regarding claim 38, the reference teaches dispersing a binder comprising fullerenes into a matrix phase and sintering under sufficient pressure and time to obtain a composite material (spec page 13). Regarding claims 39 and 48, the reference's disclosed method would inherently have sufficient pressure to disperse the carbon binder into the matrix phase and have between 1 and 99% binder (spec page 13-14). Regarding claims 40-47, (spec. pages 13-14). Regarding claims 49-50, the above taught sintering pressure and temperatures are inherently sufficient to create a reaction between the carbon phase and the matrix phase. The material is capable of being used as a coating.

2. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching since both are sintered (Withers, column 8 line 36-55) composites containing fullerenes in order to enhance physical properties of the composite.

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Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Withers.

Withers, discussed above is silent as to the alignment of the fibers or the specifically claimed characteristics of the "wire."

It should be noted that the examiner is interpreting "wire" to be a fiber. Regarding claim 22-28, the fibers or wires must be arranged either randomly or in oriented positioned, therefore, it would be obvious to orient the fibers or allow them to be randomly distributed. It would also be obvious to orient the fibers in a form that was one two or three dimensional, especially since this covers any form that can be taken by the fibers.

Response to Arguments

3. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Miller whose telephone number is (571) 272-1534. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Miller



JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER

12/11/06 (r)